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Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Koch, Marcus W.; Polman, Susanne K. L.

Published in:
Cochrane Database of Systematic Reviews

DOI:
[10.1002/14651858.CD006453.pub2](https://doi.org/10.1002/14651858.CD006453.pub2)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2009

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Koch, M. W., & Polman, S. K. L. (2009). Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures. *Cochrane Database of Systematic Reviews*, (4), [006453].
<https://doi.org/10.1002/14651858.CD006453.pub2>

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Cochrane Database of Systematic Reviews 2009, Issue 4. Art. No.: CD006453.

DOI: 10.1002/14651858.CD006453.pub2.

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[Intervention Review]

Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

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Editorial group: Cochrane Epilepsy Group.

Publication status and date: New, published in Issue 4, 2009.

Citation: Koch MW, Polman SKL. Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD006453. DOI: 10.1002/14651858.CD006453.pub2.

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ABSTRACT

Background

Partial onset seizures are often treated with the standard antiepileptic drug carbamazepine. Oxcarbazepine is a newer antiepileptic drug related to carbamazepine that is claimed to be better tolerated.

Objectives

To compare efficacy and tolerability of carbamazepine and oxcarbazepine monotherapy for partial onset seizures.

Search methods

We searched the Cochrane Epilepsy Group Specialised Register (4 August 2009), the Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library* issue 3, 2009), MEDLINE (January 1966 to May 2008), reference lists of relevant articles and conference proceedings. We also contacted manufacturers and researchers in the field for published or unpublished data.

Selection criteria

Blinded and unblinded randomised controlled trials of carbamazepine versus oxcarbazepine monotherapy for partial onset seizures.

Data collection and analysis

Both authors independently assessed trial quality, according to the guidelines in the Cochrane Reviewer's Handbook, and extracted information about study population, type of intervention, outcome measures and study design. All analyses in this review are by intention-to-treat. We tested for statistical heterogeneity among the identified studies using the chi-squared test.

Main results

Three trials (723 participants) were included. Only one trial used adequate outcome measures of efficacy; therefore, the results pertaining to efficacy are based on a single trial, whereas the results pertaining to adverse events are based on all three included trials. There was no overall difference in time to treatment withdrawal between the two drugs (hazard ratio (HR) of oxcarbazepine (OXC) versus carbamazepine (CBZ): 1.04, 95% confidence interval (CI) 0.78 to 1.39). Further analyses showed no significant difference in treatment withdrawal for unacceptable side effects (HR of OXC versus CBZ: 0.85, 95% CI 0.59 to 1.24) and in treatment withdrawal for inadequate seizure control (HR of OXC versus CBZ: 1.33, 95% CI 0.82 to 2.15). Oxcarbazepine and carbamazepine appeared to be similarly effective and well tolerated although the confidence intervals around estimates were wide and do not rule out the possibility of important differences existing. Significantly fewer patients on carbamazepine treatment developed nausea or vomiting, or both (odds ratio of OXC versus CBZ: 3.15, 95% CI 1.39 to 7.14).

Authors' conclusions

Oxcarbazepine and carbamazepine appear to be similarly effective and well tolerated. However, the possibility of important differences existing between these drugs cannot be ruled out.

PLAIN LANGUAGE SUMMARY

Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Carbamazepine is the most commonly used drug to treat partial epileptic seizures. Oxcarbazepine is a newer drug that was developed with the intention to be as effective as carbamazepine but to cause fewer side effects. In this systematic review, we summarise three studies in which oxcarbazepine and carbamazepine treatment were compared directly. We found that both drugs appear to be equally effective and to cause side effects equally often. Significantly fewer patients on carbamazepine developed nausea or vomiting during treatment.

BACKGROUND

It is common clinical practice to treat patients with partial onset seizures with the well established antiepileptic drug carbamazepine (CBZ). Oxcarbazepine (OXC) is a newer antiepileptic drug derived from CBZ with the intention to reduce side effects and drug interactions, while maintaining equal efficacy. It has been claimed that OXC causes fewer side effects and fewer allergic reactions than CBZ ([Shorvon 2000](#); [Tecoma 1999](#)).

Another theoretical advantage of OXC is a difference in the metabolism of the two drugs. CBZ is metabolised via the hepatic cytochrome-P450 enzyme system, and leads to an increase in the expression (induction) of these enzymes ([Schmidt 2004](#)). OXC on the other hand does not induce changes in this enzyme system and, thus, may theoretically cause fewer drug interactions.

It is currently unknown whether these theoretical considerations have any relevant clinical consequences and whether treatment decisions should be based on them. In this systematic review, we examine randomised trials comparing the two drugs with regard to efficacy and tolerability.

OBJECTIVES

To compare the efficacy and tolerability of OXC and CBZ when used as monotherapy for the treatment of partial onset seizures.

METHODS

Criteria for considering studies for this review

Types of studies

Randomised controlled monotherapy trials comparing OXC and CBZ. The trials may be double-blinded, single-blinded or unblinded.

Adequately randomised and quasi-randomised trials are included, non-randomised trials are excluded. Trials including patients with intractable epilepsy awaiting epilepsy surgery are excluded.

An effort is made to include individual patient data if available.

Types of participants

Children and adults with all forms of partial onset seizures (simple partial, complex partial, or partial onset seizures with secondary generalisation).

Types of interventions

OXC or CBZ monotherapy.

Types of outcome measures

Primary outcome measure

The primary outcome measure is time from randomisation until withdrawal of allocated treatment (retention time). The allocated treatment may have been withdrawn due to unacceptable adverse events, inadequate seizure control or the use of additional add-on treatment. This is a combined outcome measure which encompasses efficacy as well as tolerability ([Commission 1998](#)).

Secondary outcome measures

- Time to 12-month remission from seizures.
- Time to first seizure post-randomisation.
- Adverse events: any adverse event attributed to the drug in question.

Search methods for identification of studies

We conducted a systematic literature search to identify all published and unpublished randomised controlled trials.

Electronic searches

We carried out electronic searches, without language restrictions, of:

- (a) the Cochrane Epilepsy Group Specialised Register (last searched 4 August 2009);
- (b) the Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library* issue 3, 2009) (please see [Appendix 1](#) for details of search strategy used);
- (c) MEDLINE (from January 1966 until May 2008) (please see [Appendix 2](#) for details of search strategy used).

Searching other resources

- (1) Reference tables of identified studies.
 - (2) Published abstracts of conference proceedings were hand-searched.
 - (3) Personal communication with authors of identified studies and other researchers in the field.
 - (4) Contact with the manufacturers of OXC and CBZ.
- Strategies (3) and (4) were used to ascertain unpublished or ongoing studies.

Data collection and analysis

Selection of studies

Both authors assessed independently the titles and abstracts of the publications identified by the search strategy for possible inclusion. The full text was selected for further assessment if the abstract suggested relevance. Papers not meeting the inclusion criteria are listed with the reason for omission. We resolved disagreements by discussion.

Data extraction and management

We extracted information about study population, type of intervention, outcome measures and study design from selected studies independently on a data extraction form, then entered these data into an electronic database (Review Manager 5).

Assessment of risk of bias in included studies

We evaluated the methodological quality of the studies according to the guidelines in the Cochrane Reviewer's Handbook ([Higgins 2008](#)).

Measures of treatment effect

All analyses in this review are by intention-to-treat.

Time-to-event data:

Cox regression model hazard ratios (HR) with their 95% confidence intervals (CI) are given. If results from several studies had been obtained, we would have performed a meta-analysis with the fixed-effect general inverse variance method.

Number of adverse events:

For the comparison of the number of adverse events between CBZ and OXC, odds ratios (OR) with their 95% CI are given. The studies were summarised using the Mantel-Haenszel fixed-effect model, and the OR was used as summary statistic.

Assessment of heterogeneity

We tested for statistical heterogeneity among the identified studies using the chi-squared test. If significant heterogeneity between studies had been found, we would have changed our method of meta-analysis to using the random-effects model.

RESULTS

Description of studies

See: [Characteristics of included studies](#); [Characteristics of excluded studies](#).

Results of the search

Five studies met our inclusion criteria ([Dam 1989](#); [Dizdarer 2000](#); [Donati 2007](#); [Marson 2007](#); [Reinikainen 1987](#)).

Included studies

The Standard and New Antiepileptic Drugs (SANAD) trial ([Marson 2007](#)) randomised a total of 1721 patients with epilepsy to either CBZ (378), gabapentin (377), lamotrigine (378), OXC (210), or topiramate (378). The inclusion criteria stated that patients had to have a history of two or more definite unprovoked epileptic seizures in the year previous to randomisation and that CBZ was deemed the better standard treatment option, compared to valproate, by the recruiting physician. Patients were excluded if all their seizures had been acute symptomatic seizures, if they were

four years of age or younger, or if there was a history of progressive neurological disease. Drug titration, initial maintenance dose and any increments or decrements were decided by the clinician, just as in everyday practice, aided by guidelines. Patients were seen for follow-up at 3, 6 and 12 months, and at successive yearly intervals from the date of randomisation. Occurrence of seizures, adverse events and hospital admissions were documented. When patients ceased visiting the hospital clinics, follow-up was done by the general practitioner or by a telephone interview. The SANAD trial was the only included trial using the same efficacy measures we selected for this review. Therefore, the analyses on efficacy are based solely on this trial.

Donati and coworkers (Donati 2007) performed an unblinded trial on the effect of three antiepileptic drugs on cognition in children and adolescents and randomised a total of 112 patients to either OXC (n = 55), CBZ (n = 28) or valproate (n = 29). Drug titration, initial maintenance dose and any increments or decrements were decided by the clinician, just as in everyday practice, aided by the prescribing information for the drug in question. Patients were followed for six months. Outcomes regarding cognition were the difference in performance in the Computerised Visual Searching Task and several additional measures of psychomotor speed, alertness, memory, learning and non-verbal intelligence. Further outcomes were the number of patients remaining seizure free during follow-up and the number of adverse events. The percentage of patients remaining seizure free during follow-up was comparable between the OXC group (32 of 55 patients (58%) seizure free) and CBZ group (13 of 28 patients (46%) seizure free). Since the efficacy outcome used in this trial differed from those we selected for this review, and in view of the relatively short duration of the trial, we decided not to seek individual patient data for inclusion in time-to-event regression models but limited our analyses to the adverse events data from this trial.

One trial including 52 children with partial epilepsy had been published in abstract form (Dizdarer 2000). Children up to the age of 15 with more than two partial onset seizures were included in this trial. Patients with a structural brain lesion were excluded from the study. The trial was unblinded and had two treatment groups. After randomisation, patients received either CBZ in increasing doses to 20 mg/kg/day after three to four days, or OXC to 30 mg/kg/day after three to four days. Patients were assessed at 1, 2 and 3 weeks, and 1, 3, 6, 9 and 12 months after initiation of treatment. A diary, completed by the patients and their parents, was applied to monitor side-effects. The mean follow-up period was 15.4 months in the CBZ group and 15.6 months in the OXC group. The outcomes in this study were the number of patients remaining seizure-free during follow-up and the number of adverse events. For this trial, individual patient data on efficacy measures were no longer available, but data on adverse events were provided

by the study authors.

Excluded studies

Two studies (Dam 1989; Reinikainen 1987) included patients with primary generalised as well as partial epilepsy. The percentage of patients with partial seizures was only 38% in one study (Reinikainen 1987) and not specified in the other (Dam 1989). These two trials also used outcome measures that differed from those we selected for this review. Our attempt to acquire individual patient data from the trial authors and sponsoring drug companies failed, either because the data were no longer available (Reinikainen 1987) or because we received no answer to our request from the sponsoring drug company (Dam 1989).

Risk of bias in included studies

Allocation

In two trials (Donati 2007; Marson 2007) participants were allocated to treatment by a central randomisation centre, that used a computer program for randomisation. In the study by Marson and co-workers, fewer patients were randomised to OXC since this drug was only later included in randomisation. The study by Donati and colleagues used an allocation scheme for OXC, CBZ and valproate of 2:1:1, and thus randomised fewer patients to CBZ. The trial by Dizdarer et al. (Dizdarer 2000) used a quasi-randomisation technique: patients were alternately allocated to CBZ or OXC.

Blinding

All included trials were unblinded.

Effects of interventions

Time to treatment withdrawal

For this outcome measure, a HR greater than 1 suggests an advantage for CBZ.

Only data of the SANAD trial (Marson 2007) were available for the analysis of this outcome. There was no overall difference in time to treatment withdrawal between the two drugs (HR 1.04, 95% CI 0.78 to 1.39 Analysis 1.1; Figure 1). Further analyses by the cause of treatment withdrawal also showed no significant difference between the two drugs (Treatment withdrawal for unacceptable side effects HR 0.85, 95% CI 0.59 to 1.24 Analysis 1.2; Figure 2; and Treatment withdrawal for inadequate seizure control HR 1.33, 95% CI 0.82 to 2.15 Analysis 1.3; Figure 3).

Figure 1. Comparison OXC versus CBZ, Outcome 01 Time to treatment withdrawal for any reason.

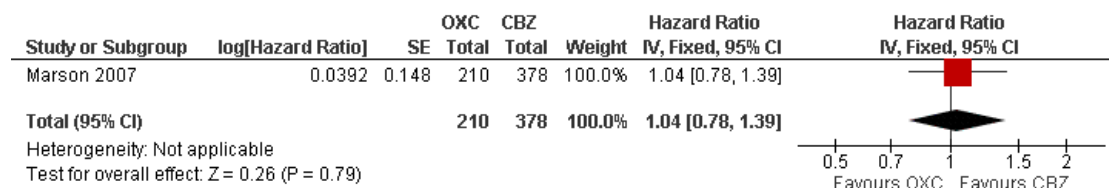


Figure 2. Comparison OXC versus CBZ, Outcome 02 Time to treatment withdrawal for unacceptable adverse events.

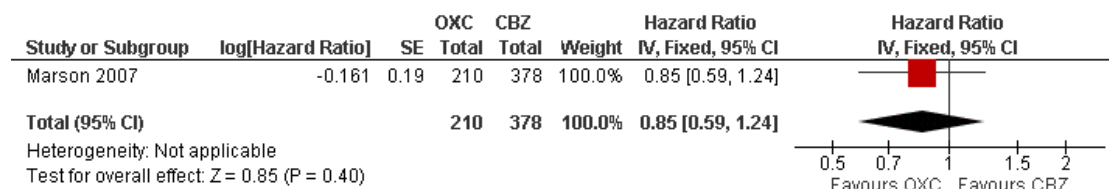
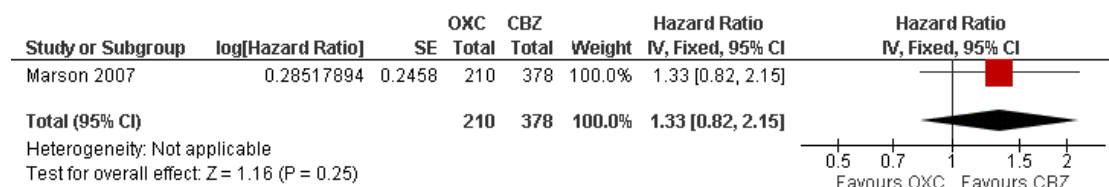


Figure 3. Comparison OXC versus CBZ, Outcome 03 Time to treatment withdrawal for inadequate seizure control.

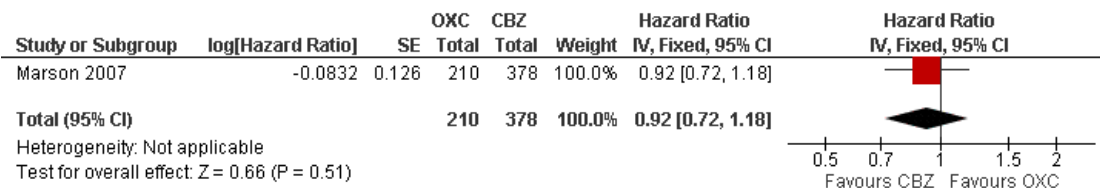


Time to 12-month remission from seizures

For this outcome measure, a HR greater than 1 suggests an advantage for OXC.

Only data of the SANAD trial were available for the analysis of this outcome. There were no significant differences in time to 12-month remission from seizures between CBZ and OXC (HR 0.92, 95% CI 0.72 to 1.18 [Analysis 1.4](#); [Figure 4](#)).

Figure 4. Comparison OXC versus CBZ, Outcome 04 Time to 12-month remission from seizures.

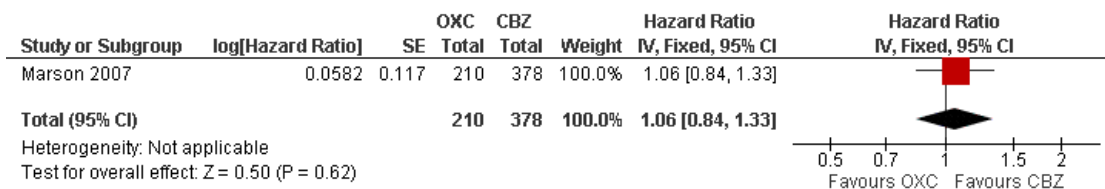


Time to first seizure post-randomisation

For this outcome measure, a HR greater than 1 suggests an advantage for CBZ.

Only data of the SANAD trial (Marson 2007) were available for the analysis of this outcome. There were no significant differences in time to first seizure post-randomisation between CBZ and OXC (HR 1.06, 95% CI 0.84 to 1.33 Analysis 1.5; Figure 5).

Figure 5. Comparison OXC versus CBZ, Outcome 05 Time to first seizure post randomisation.



Adverse Events

For this outcome measure, an OR greater than 1 indicates an advantage for CBZ.

There were no significant differences in the overall number of adverse events between the two drugs (OR 0.87, 95% CI 0.64 to 1.18; Analysis 1.6; Figure 6). We included further analyses on five common adverse events. There were no significant differences between OXC and CBZ in the occurrence of allergic rash (Analysis 1.8; Figure 7), dizziness or vertigo (Analysis 1.9; Figure 8) and

headache (Analysis 1.10; Figure 9). There was a trend towards a clinical advantage of OXC in the occurrence of fatigue/drowsiness/sedation (OR 0.67, 95% CI 0.43 to 1.07; Analysis 1.7; Figure 10) but this was not statistically significant (P = 0.09). There were significantly fewer occurrences of nausea or vomiting, or both, among patients using CBZ, which suggests a clinical advantage of CBZ over OXC (OR 3.15, 95% CI 1.39 to 7.14 Analysis 1.11; Figure 11).

Figure 6. Comparison OXC versus CBZ, Outcome 06 Overall Adverse Events.

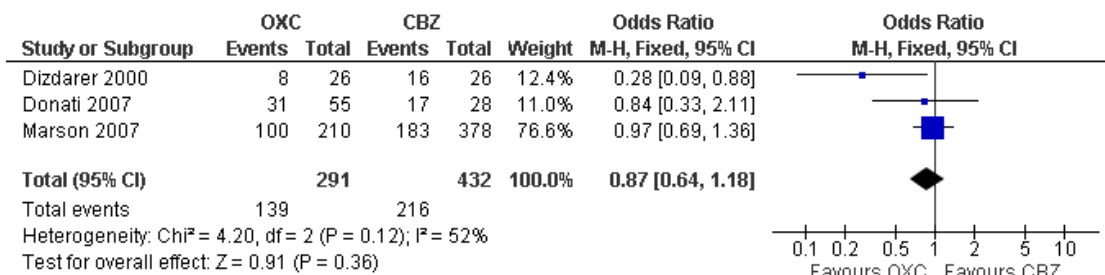


Figure 7. Comparison OXC versus CBZ, Outcome 08 Allergic Rash.

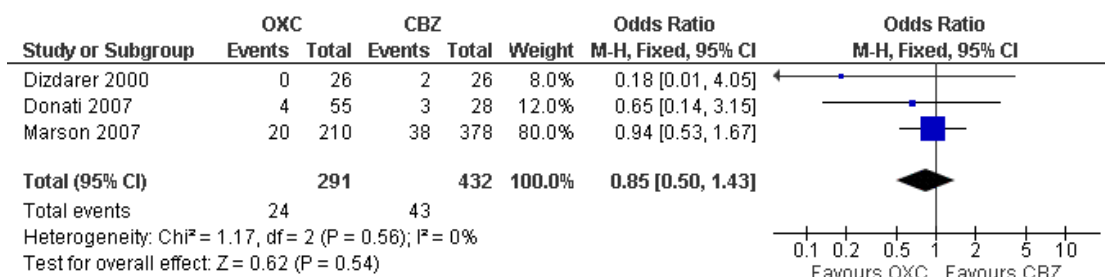


Figure 8. Comparison OXC versus CBZ, Outcome 09 Dizziness/Vertigo.

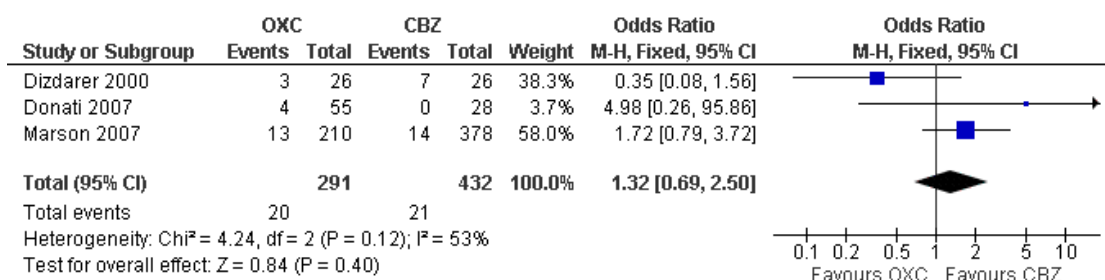


Figure 9. Comparison OXC versus CBZ, Outcome 10 Headache.

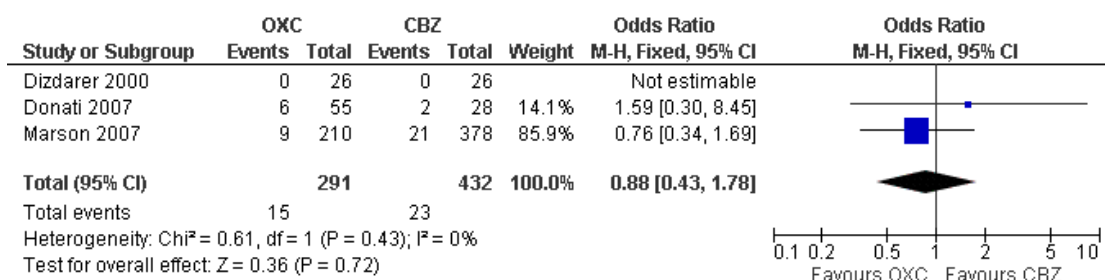


Figure 10. Comparison OXC versus CBZ, Outcome 07 Fatigue/Drowsiness/Sedation.

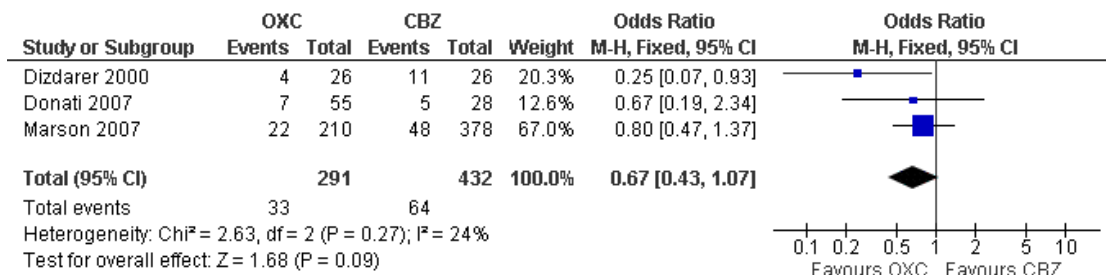
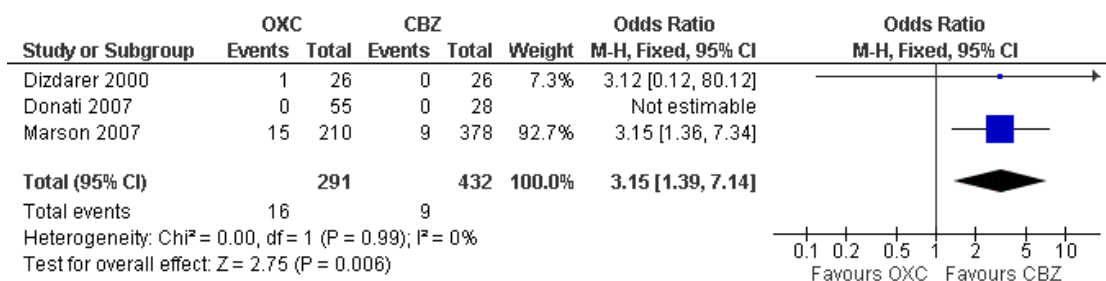


Figure 11. Comparison OXC versus CBZ, Outcome 11 Nausea/Vomiting.



We detected no significant heterogeneity between the trials in any of these analyses ($\text{Chi}^2 P > 0.10$ in all analyses).

DISCUSSION

The three randomised controlled trials included in this review were unblinded. Only one trial used adequate outcome measures of efficacy; therefore, the results pertaining to efficacy are based on a single trial (Marson 2007).

With regard to the efficacy of the treatments, there were no significant differences between CBZ and OXC in the time to treatment withdrawal (overall), in the time to treatment withdrawal due to inadequate seizure control, in the time to the first seizure post randomisation or in the time to 12-month remission from seizures.

The tolerability of the two treatments was comparable: there were no significant differences in the time to treatment withdrawal due to unacceptable adverse events, or in the overall number of adverse events. Significantly fewer patients allocated to CBZ treatment experienced nausea or vomiting, which suggests an advantage of CBZ over OXC for this particular outcome.

In summary, our analyses suggest that CBZ and OXC have a similar efficacy and tolerability in patients with partial onset seizures, but the confidence intervals are wide and do not rule out the possibility of important differences existing. There is currently no evidence to suggest that either drug is superior to the other.

AUTHORS' CONCLUSIONS

Implications for practice

CBZ and OXC appear to be equally effective in the treatment of partial onset seizures, and are equally well tolerated; but confidence intervals are wide and do not exclude the possibility of important differences existing. There is currently no evidence to suggest that either drug is superior to the other. There was a significant advantage of CBZ over OXC in the occurrence of nausea or vomiting on treatment.

Implications for research

The analyses of efficacy and adverse events depend solely, and largely respectively, on a single large trial which was not specifically

designed to compare OXC and CBZ. While the two drugs appear similar in efficacy and tolerability, the confidence intervals are wide and do not rule out the possibility of important differences between OXC and CBZ. Further studies comparing the efficacy and tolerability of OXB and CBZ are justified.

ACKNOWLEDGEMENTS

We would like to thank Prof Anthony Marson, who acted as author support for this review, for his helpful advice. We would like to thank the German Cochrane Centre for allowing us to attend the necessary training courses as international guests.

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Donati 2007 *{published data only}*

* Donati F, Gobbi G, Campistol J, Rapatz G, Daehler M, Sturm Y, et al. The cognitive effects of oxcarbazepine versus carbamazepine or valproate in newly diagnosed children with partial seizures. *Seizure* 2007;**16**:670–9.

Marson 2007 *{published data only}*

* Marson A, Al-Kharusi A, Alwaidh M, Appleton R, Baker G, Chadwick D, et al. The SANAD study of effectiveness of carbamazepine, gabapentin, lamotrigine, oxcarbazepine, or topiramate for treatment of partial epilepsy: an unblinded randomised controlled trial. *The Lancet* 2007;**369**: 1000–15.

References to studies excluded from this review

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Higgins JPT, Green S (editors). Cochrane Handbook for Systematic Reviews of Interventions 5.0.1 [updated September 2008]. The Cochrane Collaboration, 2008. Available from www.cochrane-handbook.org.

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Schmidt D, Elger CE. What is the evidence that oxcarbazepine and carbamazepine are distinctly different antiepileptic drugs?. *Epilepsy Behavior* 2004;**5**(5):627–35.

Shorvon 2000

Shorvon S. Oxcarbazepine: a review. *Seizure* 2000;**9**(2): 75–9.

Tecoma 1999

Tecoma ES. Oxcarbazepine. *Epilepsia* 1999;**40**:S37–46.

* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Dizdarer 2000

Methods	Single-centre randomised controlled unblinded trial. Quasi-randomisation by alternately allocating patients to CBZ and OXC
Participants	Children under the age of 14 with a history of more than two partial onset seizures. Patients with a structural brain lesion were excluded from the study
Interventions	Either CBZ in increasing doses to 20 mg/kg/day after 3 to 4 days, or OXC to 30 mg/kg/day after 3 to 4 days
Outcomes	Recurrence of seizures during follow-up. Number of adverse events
Notes	

<i>Risk of bias</i>		<i>Risk of bias</i>
Item	Authors' judgement	Description
Adequate sequence generation?	Yes	Quasi-randomisation by alternately allocating patients to CBZ or OXC
Allocation concealment?	No	Unblinded trial.
Blinding? All outcomes	No	Unblinded trial.

Donati 2007

Methods	Multicentre randomised controlled unblinded trial. Patients were randomised by a central randomisation centre, using a computer program
Participants	Previously untreated patients aged 6 to 16 years with a history of at least two unprovoked partial seizures
Interventions	Drug titration, initial maintenance dose and any increments or decrements were decided by the clinician, like in everyday practice, aided by the prescribing information for the drug in question
Outcomes	Difference in performance in the Computerised Visual Searching Task and several additional measures of psychomotor speed, alertness, memory, learning and non-verbal intelligence between baseline and 6 months. Number of patients remaining seizure free during follow-up. Number of adverse events
Notes	

<i>Risk of bias</i>	<i>Risk of bias</i>
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Donati 2007 (Continued)

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	Randomisation by a central randomisation centre, using a computer program
Allocation concealment?	No	Unblinded trial.
Blinding? All outcomes	No	Unblinded trial.

Marson 2007

Methods	Multicentre randomised controlled unblinded trial. Patients were randomised by a central randomisation centre, using a computer program that used a minimisation procedure
Participants	Children and adults above the age of 4 with a history of two or more definite unprovoked epileptic seizures in the year previous to randomisation. CBZ deemed the better standard treatment option, compared to valproate, by the recruiting physician. Patients were excluded if all seizures had been acute symptomatic seizures, or if there was a history of progressive neurological disease
Interventions	Drug titration, initial maintenance dose and any increments or decrements were decided by the clinician, like in everyday practice, aided by guidelines
Outcomes	Time to treatment withdrawal (overall). Time to treatment withdrawal for unacceptable adverse events. Time to treatment withdrawal for inadequate seizure control. Time to 12-month remission from seizures. Time to first seizure. Number of adverse events
Notes	

Risk of bias

Risk of bias

Item	Authors' judgement	Description
Adequate sequence generation?	Yes	Randomisation by a central randomisation centre, using a computer program
Allocation concealment?	No	Unblinded trial.
Blinding? All outcomes	No	Unblinded trial.

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Dam 1989	Inclusion of patients with primary generalised seizures.
Reinikainen 1987	Inclusion of patients with primary generalised seizures.

DATA AND ANALYSES

Comparison 1. OXC versus CBZ

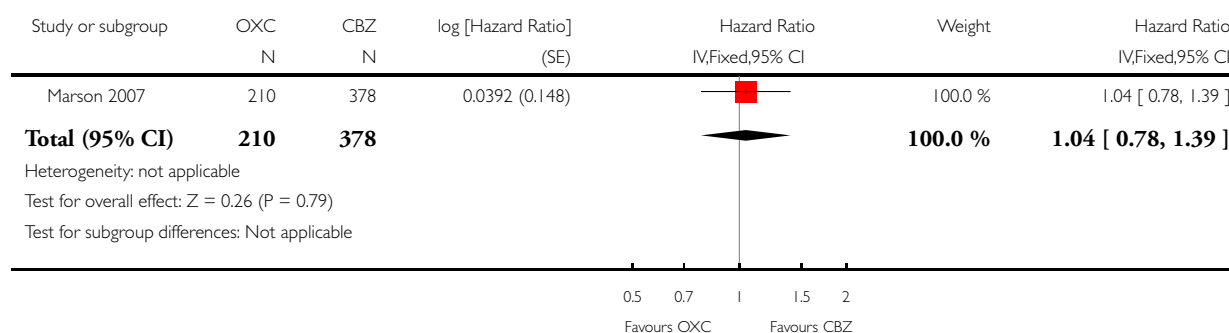
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Time to treatment withdrawal for any reason	1	588	Hazard Ratio (Fixed, 95% CI)	1.04 [0.78, 1.39]
2 Time to treatment withdrawal for unacceptable adverse events	1	588	Hazard Ratio (Fixed, 95% CI)	0.85 [0.59, 1.24]
3 Time to treatment withdrawal for inadequate seizure control	1	588	Hazard Ratio (Fixed, 95% CI)	1.33 [0.82, 2.15]
4 Time to 12-month remission from seizures	1	588	Hazard Ratio (Fixed, 95% CI)	0.92 [0.72, 1.18]
5 Time to first seizure post-randomisation	1	588	Hazard Ratio (Fixed, 95% CI)	1.06 [0.84, 1.33]
6 Overall Adverse Events	3	723	Odds Ratio (M-H, Fixed, 95% CI)	0.87 [0.64, 1.18]
7 Fatigue/Drowsiness/Sedation	3	723	Odds Ratio (M-H, Fixed, 95% CI)	0.67 [0.43, 1.07]
8 Allergic Rash	3	723	Odds Ratio (M-H, Fixed, 95% CI)	0.85 [0.50, 1.43]
9 Dizziness/Vertigo	3	723	Odds Ratio (M-H, Fixed, 95% CI)	1.32 [0.69, 2.50]
10 Headache	3	723	Odds Ratio (M-H, Fixed, 95% CI)	0.88 [0.43, 1.78]
11 Nausea/Vomiting	3	723	Odds Ratio (M-H, Fixed, 95% CI)	3.15 [1.39, 7.14]

Analysis 1.1. Comparison 1 OXC versus CBZ, Outcome 1 Time to treatment withdrawal for any reason.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 1 Time to treatment withdrawal for any reason

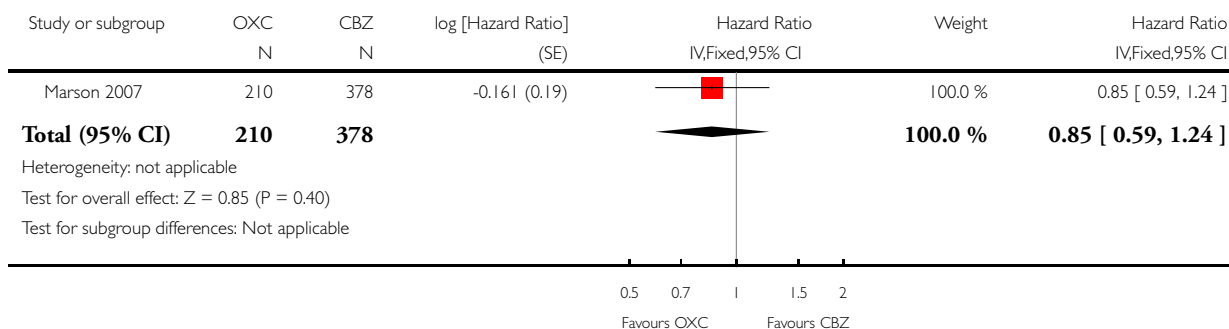


Analysis 1.2. Comparison 1 OXC versus CBZ, Outcome 2 Time to treatment withdrawal for unacceptable adverse events.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 2 Time to treatment withdrawal for unacceptable adverse events

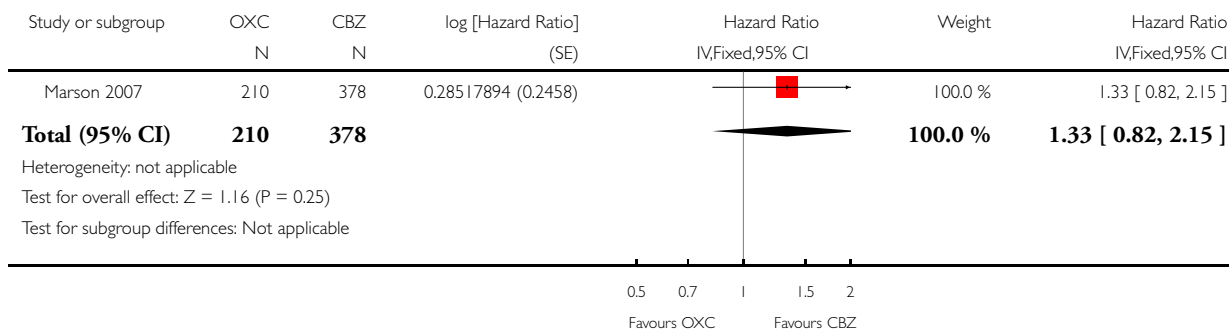


Analysis 1.3. Comparison 1 OXC versus CBZ, Outcome 3 Time to treatment withdrawal for inadequate seizure control.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 3 Time to treatment withdrawal for inadequate seizure control

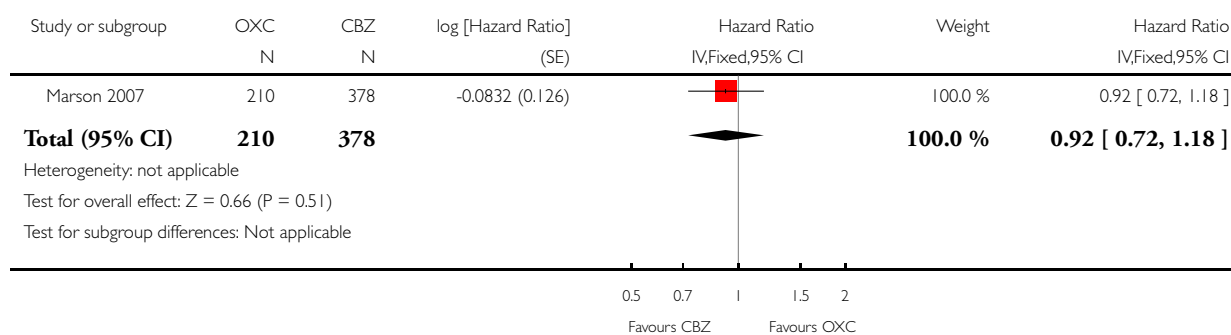


Analysis 1.4. Comparison 1 OXC versus CBZ, Outcome 4 Time to 12-month remission from seizures.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 4 Time to 12-month remission from seizures

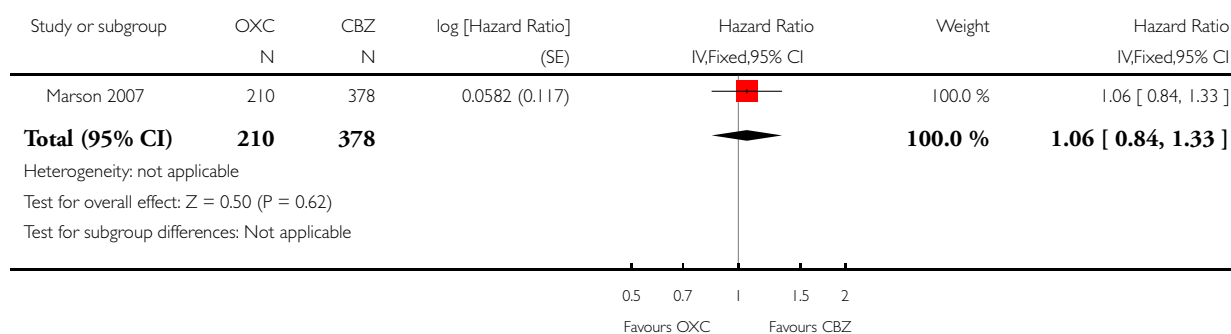


Analysis 1.5. Comparison 1 OXC versus CBZ, Outcome 5 Time to first seizure post-randomisation.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 5 Time to first seizure post-randomisation

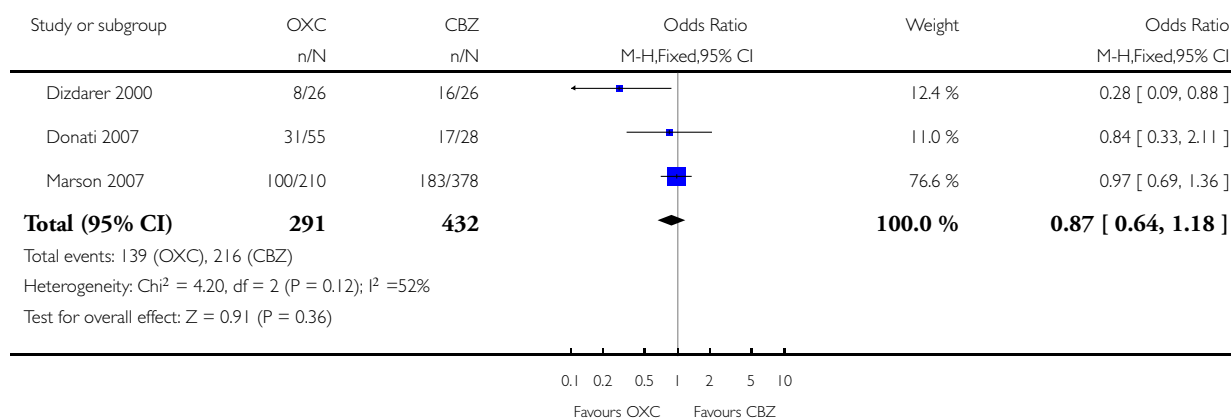


Analysis 1.6. Comparison 1 OXC versus CBZ, Outcome 6 Overall Adverse Events.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 6 Overall Adverse Events

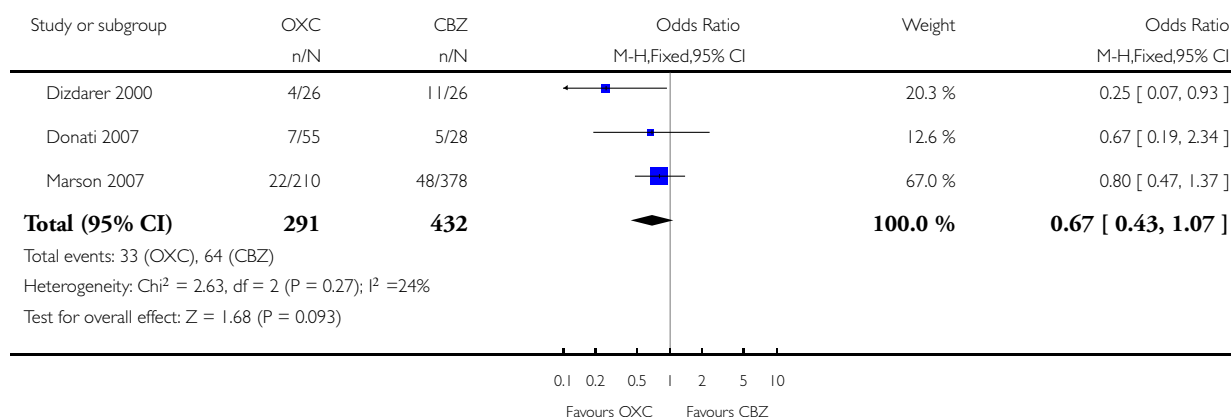


Analysis 1.7. Comparison 1 OXC versus CBZ, Outcome 7 Fatigue/Drowsiness/Sedation.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 7 Fatigue/Drowsiness/Sedation

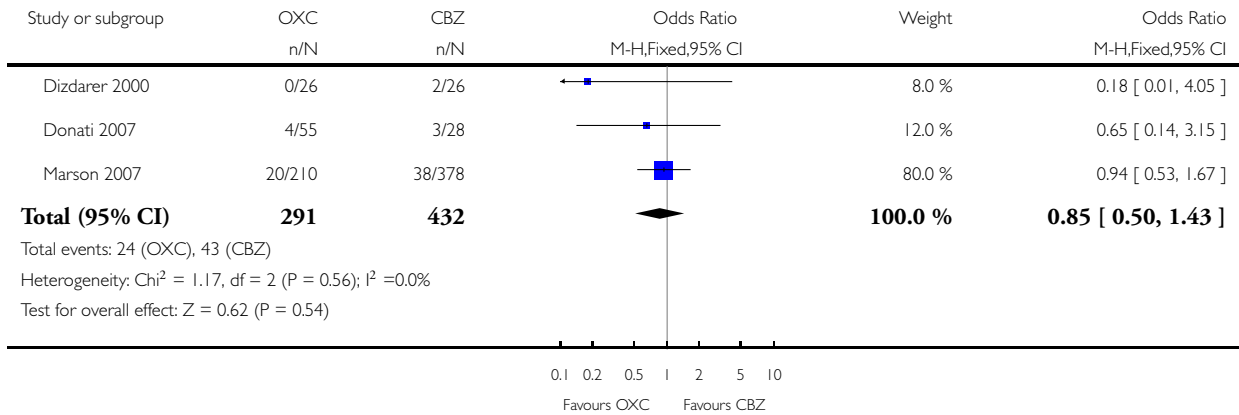


Analysis 1.8. Comparison 1 OXC versus CBZ, Outcome 8 Allergic Rash.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 8 Allergic Rash

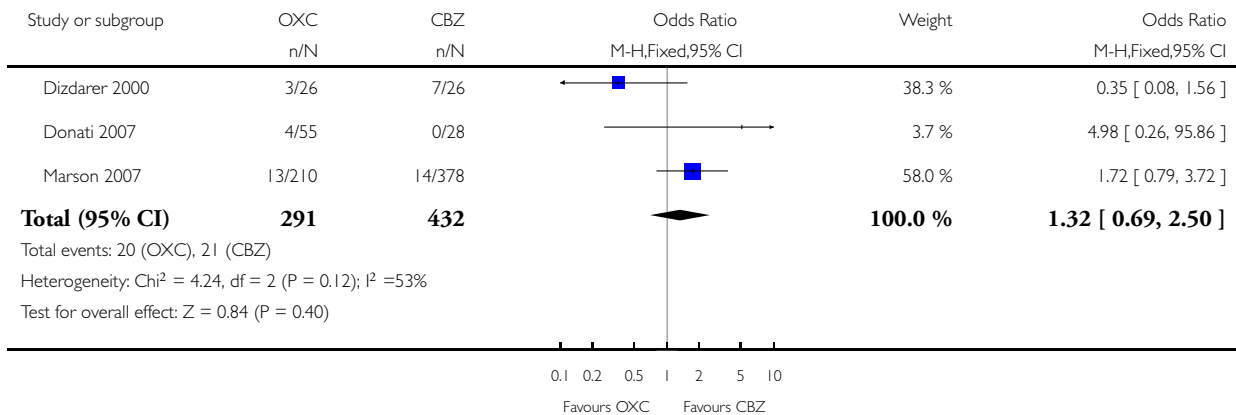


Analysis 1.9. Comparison 1 OXC versus CBZ, Outcome 9 Dizziness/Vertigo.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 9 Dizziness/Vertigo

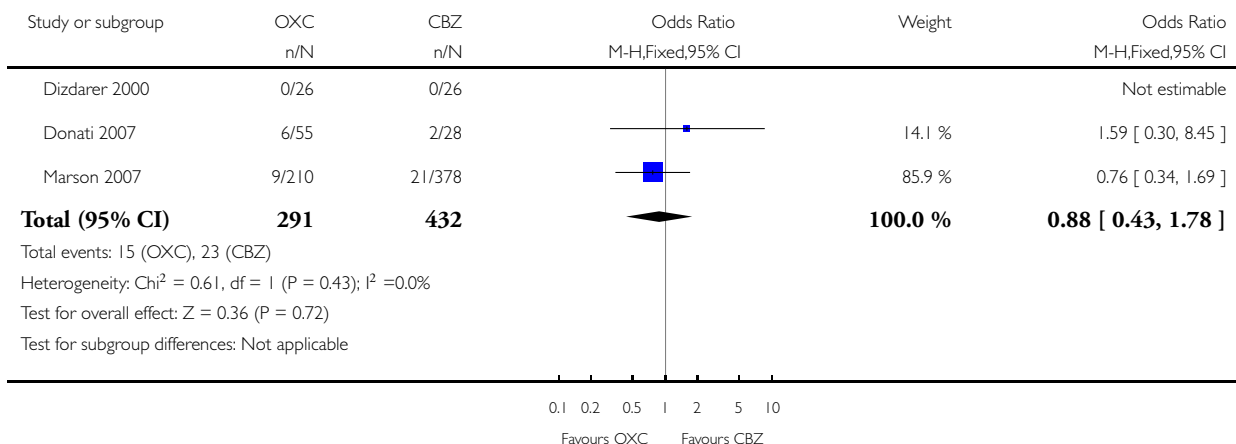


Analysis 1.10. Comparison 1 OXC versus CBZ, Outcome 10 Headache.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 10 Headache

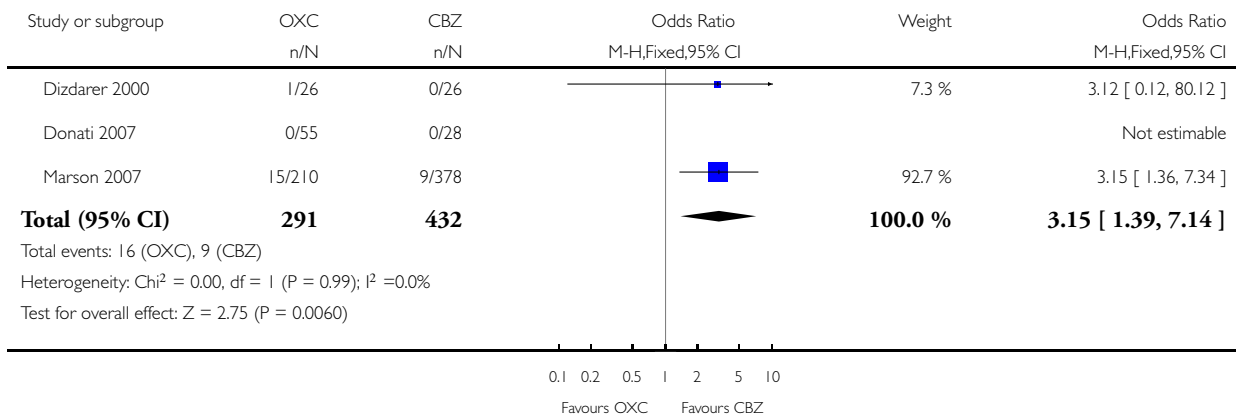


Analysis 1.11. Comparison 1 OXC versus CBZ, Outcome 11 Nausea/Vomiting.

Review: Oxcarbazepine versus carbamazepine monotherapy for partial onset seizures

Comparison: 1 OXC versus CBZ

Outcome: 11 Nausea/Vomiting



APPENDICES

Appendix 1. CENTRAL search strategy

- #1 (epilep*)
- #2 MeSH descriptor Epilepsy explode all trees
- #3 (seizure*)
- #4 MeSH descriptor Seizures explode all trees
- #5 convulsion*
- #6 (#1 OR #2 OR #3 OR #4 OR #5)
- #7 oxcarbazepi*
- #8 (trilept*)
- #9 (#7 OR #8)
- #10 MeSH descriptor Carbamazepine explode all trees
- #11 (tegret*) or (carbamazepi*)
- #12 (#10 OR #11)
- #13 (#9 AND #12)

#14 (#6 AND #13)

Appendix 2. MEDLINE (PubMed) search strategy

#1 (randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized controlled trials[mh] OR random allocation[mh] OR double-blind method[mh] OR single-blind method[mh] OR clinical trial[pt] OR clinical trials[mh] OR ("clinical trial"[tw]) OR ((singl*[tw] OR doubl*[tw] OR trebl*[tw] OR tripl*[tw]) AND (mask*[tw] OR blind*[tw])) OR ("latin square"[tw]) OR placebos[mh] OR placebo*[tw] OR random*[tw] OR research design[mh:noexp] OR comparative study[mh] OR evaluation studies[mh] OR follow-up studies[mh] OR prospective studies[mh] OR cross-over studies[mh] OR control*[tw] OR prospectiv*[tw] OR volunteer*[tw]) NOT (animal[mh] NOT human[mh])

#2 epilepsy[mh] OR epilep*[tw]

#3 seizures[mh] OR seizure*[tw]

#4 convulsion*[tw]

#5 2 OR 3 OR 4

#6 oxcarbazepine[mh] OR oxcarbazepine[tw] OR oxcarbazepi*[tw] OR trileptal[tw] OR trilept*[tw]

#7 carbamazepine[mh] OR carbamazepine[tw] OR carbamazepi*[tw] OR tegret*[tw]

#8 6 OR 7

#9 1 AND 5 AND 8

HISTORY

Protocol first published: Issue 2, 2007

Review first published: Issue 4, 2009

CONTRIBUTIONS OF AUTHORS

Marcus Koch and Susan Polman co-operated through all stages of assessing trials for inclusion, data extraction, data analysis and writing of the review.

DECLARATIONS OF INTEREST

None known.

INDEX TERMS

Medical Subject Headings (MeSH)

Anticonvulsants [adverse effects; *therapeutic use]; Carbamazepine [adverse effects; *analogs & derivatives; *therapeutic use]; Epilepsies, Partial [*drug therapy]; Randomized Controlled Trials as Topic

MeSH check words

Humans